

UIC NATIONAL TECHNICAL WORKGROUP
PRODUCT COVER SHEET

ISSUE # 2

1. Title

“A Underground Injection Control Summary of Regional and State Implementation of the Area of Review.”

2. Date of Finalization

March 17, 1998

3. Background/Brief Reason for its Need

To summarize the various ways EPA regions and primacy states implement the area of review concept as set forth in Section 146.6 of the UIC regulations.

4. Author(s)

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5. Background Information Location (where the supporting documents are)

Supporting data, results from questionnaire, etc. are located in the EPA UIC program office in Region 3. Contact Stephen Platt at 215-566-5464.

**A Underground Injection Control Program Summary
of
Regional and State Implementation of the Area of Review**

One of the topics which the EPA UIC Technical Workgroup determined important, during its initial development of issues upon which work, was the collection, summation and distribution of information regarding how EPA and State UIC programs implement the Area of Review concept. The attached table has been developed to show the various ways each of the EPA regions and states implement the Area of Review requirements as set forth in Section 146.6 of the UIC regulations.

The information in this table was obtained from a questionnaire which was sent out to each of the EPA regional UIC program offices, who in turn, sent it to their respective primacy states. The questionnaire can be found in Appendix A. The two columns of the table, under the heading “fixed radius”, respond to Parts (a) and (c) of question one. The next two columns, under the heading “calculated approach”, respond to Parts (a) and (c) of question two. The final three columns of the table respond to questions four, five and six, respectively.

If during your review of this table any inaccuracies become apparent, or if you desire more specific information on how the Area of Review is administered in a particular region or primacy state, please contact the respective UIC Technical Workgroup member who represents the region and/or state of interest. A list of Workgroup members is available on the National UIC Technical Forum web page, www.epa.gov/r10earth/offices/water/uic-tech.htm

AREA OF REVIEW SUMMARY

Region/State	Agency Class	Well	Fixed Radius		Calculated approach		Monitoring Wells?	AOR Inspected?	AOR on Rule Auth Wells ? Call-in?
			Distance	Verified by	Formula Used	# times > 1/4 mile			
II NY	USEPA	IIR,IID	1/4 mi	Yes	"Rad. of Press." + Frac. Anlsys.	9x	Yes, DW wells	No	No
III PA/VA	USEPA	IIR,IID	1/4 mi	Yes, IID	"Rad. of Press."	Twice	Sometimes	Yes	No
WV	DOE	IID	1/4 mi	Yes	"Rad. of Press", Res. Eng. Mdl.	None	Sometimes	Yes	Yes, Call-in
IV KY/TN	USEPA	IIR,IID	1/4 mi	No(a)	"Rad. of Press."	NA	---	---	---
MS	MO&GB	IIR,IID	1/4 mi	Yes(b)	"Rad. of Press."	NA	---	---	---
AL	AO&GB	IIR,IID	1/4 mi	No	"Rad. Of Press."	NA	---	---	---
FL	USEPA	IIR,IID	1/4 mi	No	"Rad. Of Press."	NA	---	---	---
V MI	USEPA	I	2 mi	No	Not Used	NA	No	No	No
	USEPA	IIR,IID III,V(deep)	1/4 mi	No(c)	Section 146.6	NA	No	No	Yes, Call-in
IL	IEPA	I	2.5 mi	Yes	Section 146.6	None	Yes	No	No
	IDNR	IIR,IID	1/4mi	No(c)	Not Used	NA	No	No	No

IN	USEPA	I	2 mi	No	Not Used(1)	NA	Yes	No	No
	IDNR	IIR,IID	1/4mi	No(c)	Not Used	NA	No	No	No
OH	OEPA	I	1/4mi/	Yes	See Attached(2)	None	Yes	No	No
	ODNR	IIR,IID	1/4 mi if q<200 bbl/d/yr 1/2 mi if q>200 bbl/d/yr	Yes	See Attached(3)	Distance yields to 200 bbl/d/yr rate	No	Yes	No
		III	1/4 mi	No	None	NA	No	Yes	
VI (Osage)	USEPA	IIR,IID	1/4 mi	Yes(d)	“Rad. of Press.”	?	Few	No	No
OK/NM	Tribal	IIR,IID	1/2 mi	Yes	“Rad. of Press.”	?	Few	No	No
AR	ADPC&E	I NHAZ I HAZ	1/2 mi 2mi	Yes(e)	Section 146.6	---	No	No	No
	AOGC	IIR,IID,V	1/2 mi	Yes	Not Used	---	No	No	Yes, Call-in
LA	OC	I	2 mi	Some	“Rad. of Press.”(f)	Rarely	No	No	No
	LDNR	All Others	1/4mi	No	Not Used	NA	No	No	Yes, Call-in

NM	NMED	I,III,V	2.5 mi or 1/4 mi if Calc=0 (g)	Some	“Rad. of Press.”	Rarely	Sometimes	Some	No
	NMOCD	IIR,IID I NHAZ, III	1/2mi	No	Not Used	NA	No	No	No
			1/4mi	No	Not Used	NA	No	No	No
OK	OCC	IIR,IID	1/4 mi (non- com) 1/2 mi for com.	Yes(h)	“Rad.of Press.”(h)	?	Sometimes	No	Yes, Call-in
	ODEQ	I,III,V	NA	NA	Section 146.6	Most All	No	Yes	Yes
TX	RCC	IIR,IID	1/4 mi	No	Applicants may use “Rad. Of Press.” calc.	Rarely	No	No	No
	TNRCC	I	2 1/2 mi	Yes	Section 146.6	2.5mi overrules calc.	Very Few [3]	Yes/IID	No
		III,V	1/4mi	No	Not Used	NA	Class III	No	No
VII MO	MDNR	IIR,IID	1/2 mi	No	Not Used	NA	No	No	No

KS	KCC	IIR,IID	1/4 mi	Yes	Section 146.6	Rarely	Sometimes	Yes	Yes, Call-in
	KDHE	I,III,V	2.5 mi (IH)	Yes	Cone of Influence	None	No	Yes	No
			1 mi (I non-haz)	Yes	Cone of Influence	3 times	No	No	No
			1/4 mi (III,V)	No	Not Used	NA	Class V remediation/ Class III sometimes	No	No
NE	NOGCC	IIR,IID	1/2 mi min	No	Not Used	NA	Sometimes	No	Yes
	DEQ	I,III,V	No (I)	NA	“Radius of Press.”	?	Sometimes	Some	No
			No (III)	NA	“	?	Sometimes	Some	No
			1000ft. - 1 mi (V)	Yes	Not Used	NA	Sometimes	Some	No
VIII MT	USEPA	IIR,IID	1/4 mi	Yes	“Rad.of Press.”	Once	No	No	No
CO	COGCC	IIR,IID	1/4 mi	Some	Cylindric Calc.(i)	None	No	No	No
WY	WOGCC	IIR,IID	1/4mi	Yes, IID	?	None	Yes, IIR	No	Yes, Call-in
UT		IIR,IID	1/2mi	No	---	---	Sometimes	---	---
IX AZ		III	1/4mi	Some	Numeric Model (j)	None	Yes	Yes	Yes

CA		IIR,IID	geology depend.	No	Not Used	NA	Sometimes	No	No
HI	USEPA	V	1/4 mi to 1/2 mi	No	Concern is Impact on Ocean	NA	Yes	No	No
NV		II,III,V	1mi	No	Will allow but none submitted	NA	For Class V	Some	No
Navajo	USEPA	IIR,IID,III	1/2mi	Yes	“Rad. of Press.” (modified)	Rarely	For Class III	Some	No
X AK	AOGCC	IIR,IID	1/4mi	No	Utilize Fracture Gradients	NA	Sometimes	No	No

- (a) Don't feel they have good data
 - (b) Shallow injectors
 - (c) Calculated to limits of endangerment if problem wells are present
 - (d) Not in fracture flow formations
 - (e) Select most conservative value
 - (f) $P_c = 0.433[(p_{iz})(D_{iz} - D_{usdw}) + (p_{USDW})(D_{usdw} - B_{USDW})] - P_o$
 - (g) New Mexico radius of pressure influence calculation
 - (h) Oklahoma radius of pressure influence calculation
 - (i) Uses formation thickness, porosity, rate, 15 year life
 - (h) Uses hydraulic conductivity, gradient, porosity, thickness, confined/unconfined, injection rate
- (1) When the facility is injecting banned hazardous waste, the AOR is expanded to include the modeled plume boundary
 - (2) Ohio EPA's formula can be obtained from Region or State agency
 - (3) Ohio DNR's formula can be obtained from Region or State agency